

provided to a scanning exposure apparatus that illuminates said mask on which a transfer pattern is formed and scans said mask in a predetermined scanning direction and synchronously scans said substrate in a direction corresponding to said scanning direction, thereby exposing said pattern on said mask onto said substrate, comprising:

a base;

a scanning stage that is movable in said scanning direction on said base;

a fine adjustment stage that is movable within predetermined ranges in said scanning direction and in a direction perpendicular to said scanning direction with respect to said scanning stage, said fine adjustment stage mounting said object [of scanning] thereon, said fine adjustment stage having a movable mirror;

actuators arranged in said scanning direction and in the direction perpendicular to said scanning direction with respect to said scanning stage for driving said fine adjustment stage;

an interferometer that irradiates a measurement light beam on said movable mirror to detect a displacement of said fine adjustment stage with respect to said scanning stage; and

a cooling unit that cools said actuators by circulating a predetermined cooling fluid, said cooling unit circulating said cooling fluid from a portion near an optical path of the light beam from said interferometer toward a distant portion.

46. (Amended) A stage apparatus for scanning an object [of scanning] that includes at least one of a mask and a photosensitive substrate, said stage apparatus being provided to a scanning exposure apparatus that illuminates said mask on which a transfer pattern is formed and scans said mask in a predetermined scanning direction and

synchronously scans said substrate in a direction corresponding to said scanning direction, thereby exposing said pattern on said mask onto said substrate, comprising:

a base;

a scanning stage that is movable in said scanning direction on said base;

a fine adjustment stage that is movable within predetermined ranges in said scanning direction and in a direction perpendicular to said scanning direction with respect to said scanning stage, said fine adjustment stage mounting said object [of scanning] thereon;

actuators arranged in said scanning direction and in the direction perpendicular to said scanning direction with respect to said scanning stage, said actuators driving said fine adjustment stage; and

a cooling unit that cools said actuators by circulating a predetermined cooling fluid, said cooling unit circulating said cooling fluid from said actuators arranged in the direction perpendicular to said scanning direction with respect to said scanning stage for driving said fine adjustment stage.

54. (Amended) A lithographic device comprising [the following elements supported] in [the] a following order:

a substrate stage that is positionable by a first positioning device parallel to a first direction;

an imaging system having a main axis directed parallel to a vertical direction perpendicular to the first direction;

a mask stage that is positionable at least parallel to the first direction by a second positioning device; and

an illumination optical system that irradiates an exposure illumination light beam;